THE DEVELOPMENT OF NEW FORMS OF WORK ORGANIZATION IN SWEDEN

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Data for this paper was gathered primarily through interviews with current and former officials of the government, the employers' confederations and the blue and white collar unions who are or have been directly involved in the development of new forms of work organization. As well, interviews were carried out with a few key observers (i.e., academics, researchers) of the Swedish scene.

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BIOGRAPHICAL NOTE

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I INTRODUCTION

There is growing opinion, both expert and popular, that the development of new forms of work organization is crucial if the western industrialized nations are to meet the challenges of the emerging economic, technological and social era. The Economic Council of Canada's comprehensive study of labour markets and technological change, Making Technology Work, for example, found that the successful introduction of new technology depends "...as much on innovation in organization and the development of human resources as it does on technical expertise." And Business Week (September 19, 1987) cites productivity increases of 30 per cent to 50 per cent when plants are designed accordingly to new rather than traditional approaches to organizing work. The phrase new forms of work organization refers to the redesign of work to promote workers' competence, autonomy and opportunities for ongoing learning, the direct participation by workers in the redesign process and the indirect participation by workers, via their union, in the development of the enterprise as a whole. In this regard, no other country has more experience nor has made more progress than Sweden.

Over the past twenty years there have been three distinct phases in the development of new forms of work organization in Sweden. The purpose of this paper is to describe these three phases, to assess, from the perspective of Swedish management,

unions and the government, their significance and to briefly reflect upon the relevance of the Swedish experience for Canada.

The paper is organized into four main sections and one appendix. The Introduction constitutes Section I; Section II sets the stage by outlining some of the key characteristics of the Swedish socio-economic system with particular emphasis on the industrial relations sub system. Section III deals with the three phases referred to above, in particular the concomitant three sets of national programs aimed at renewing work organization and the different roles played by management, labour and government in each program. Section IV contains some suggestions as to what Canada might learn from Sweden's rich and, relatively speaking, long history of developing more democratic and effective forms of work organization. Appendix A discusses the state's labour market policy. Its crucial impact upon the development of new forms of work organization cuts across all of the above mentioned phases and some current tendencies in labour market policy reflect the growing impact of these new work forms. The paper concludes with a selected bibliography.

II THE SWEDISH MODEL

Sweden is a small country with a population of 8.3 million. By European standards industrialization came late to Sweden; at the turn of the century more than 70 per cent of the workforce was employed in agriculture. However, the transition from an agraian to a mature industrial society was rapid (within half a century) and relatively free of conflict.

The Swedish economy today is highly dependent on international markets, with exports equal to approximately one-third of the gross domestic product. Since the early 1970s there has been a marked shift in Swedish goods exports away from raw materials and semi-finished products in traditional areas such as iron, steel and forestry and toward finished products, particularly in the engineering industry (e.g., cars, trucks, communications equipment). Sweden has a labour force of 4.3 million with an activity rate (total labour force as a percentage of total population between the ages of 16 and 64) of 83 per cent, the highest level among OECD member countries.[1] Seventy-seven per cent of women are in the labour market (most on a part-time basis), the highest female participation rate of any OECD country. Unemployment currently stands at less than 2 per cent.

[1] All statistics cited are approximations only.

By comparison Canada exports about 37 per cent of its gross domestic product. Canada has an overall activity rate of 70 per cent, (68 per cent for women) and an official unemployment rate of 8 per cent. These statistics mean that Sweden is almost as dependent on foreign markets as Canada and is not "artificially" lowering its unemployment rate by keeping some sectors of society outside the labour force.

Key characteristics of the so-called Swedish Model include the co-existence of a robust market economy and a comprehensive welfare state, political stability and a highly developed system of industrial relations. Swedish industry is 90 per cent privately owned while approximately 65 per cent of the G.N.P. is distributed through political decisions. Approximately one-third of the work force, 1.4 million persons, is employed in the public sector. Sweden's microeconomic policies combine a laissez-faire approach to the product market with direct and extensive government intervention in the labour market. The Social Democratic Party (SAP) has formed the government for 49 of the last 55 years. From 1976 to 1982 a coalition of nonsocialist parties held power in Sweden. However, in practice their policies and programs closely followed those of the social democrats. Since the Swedish industrial relations system is of particular significance for the subject of this paper, it is described below in more detail.

Both employers and employees in Sweden are organized in confederations that are highly centralized and favour a cooperative rather than an adversaerial approach in their dealings with each other and with the government. There is no counterpart in Canada to the powerful centrally controlled employer confederations; nor can the decision-making power and influence of the Swedish trade union confederations be compared to that of their Canadian counterparts.

Employers in Sweden are organized into four major employer confederations: one for the private sector and three for the public sector. The confederations promote and safeguard their commercial and political interests and negotiate with unions and the government on their members behalf. The Swedish Employers Confederation (SAF), by far the most dominant, covers the private sector. It represents over 42,000 member companies organized into 36 sectoral organizations and its affiliated companies employ 1.3 million people. Public sector employers are organized at the federal level by the National Swedish Agency for Government Employers (SAV), at the county level by the Federation of Swedish County Councils (LF), and at the municipal level by the Swedish Association of Local Authorities (KF).

There are three main union confederations.[2] The Swedish Trade Union Confederation (LO) and the Central Organization of Salaried Employees (TCO) dominate the blue and white-collar sectors respectively. SACO SR consists of professional unions representing employees who generally have had an academic training. A fourth confederation, the Swedish Union of Foremen and Supervisors (SALF) has a membership of some 72,000 but is not a significant actor in the industrial relations system.

The LO was formed in 1898. Its 21 affiliated unions have a total membership of around two million and covers more than 90 per cent of blue-collar employees, a very high density by international standards. The majority of affiliated unions are organized on an industrial basis with one union in each company or site. The largest unions are the Swedish Municipal Workers' Union (620,000 members) and the Swedish Metal Workers' Union (450,000 members). The LO represents its affiliated unions in the areas of social and economic policy. It also bargains collectively on behalf of all members in the private sector. In the public sector, however, the two major affliate unions bargain directly, without the direct involvement of the LO.

The TCO was formed in 1944 by the merger of two organizations, one covering private-sector employees and the

[2]The description of the trade union organization is based on Hammarstrom (1985).

other covering public-sector employees. The 20 unions affiliated to the TCO represent about one million members with a density rate of about 90 per cent, again a very high figure by international standards. The TCO does not take part in collective bargaining but is active in training and represents its unions in negotiations with the government on general economic and social policies. The largest member unions are the Swedish Union of Clerical and Technical Employees in Industry (SIF) and the Swedish Union of Local Government Officers (SKTF). The four largest member unions, which are also 'vertical' industry unions, comprise three-quarters of the total TCO membership. The other member unions are organized on an occupational basis. For the purpose of collective bargaining, the TCO-affiliated unions are organized into three bargaining cartels: the PTK for the private sector, the KTK for the local and regional government sector and the TCO-S for the national government sector. The PTK also includes unions outside the TCO which are affiliated to SACO SR.

SACO SR is the smallest of the three confederations. The 26 member unions of SACO SR have around 225,000 members with a density rate of 85 per cent. These unions are organized primarily on the basis of common academic background; the largest are those which organize teachers in secondary education and graduate engineers. SACO SR has bargaining

cartels for the national and local government sector. In the private sector most SACO SR unions are affiliated to the PTK.

The links between the LO and the Social Democratic Party are very strong. Indeed, the LO and SAP are best understood as the two main branches of the labour movement. The LO's financial support to the party is of prime importance, particularly in election campaigns. A significant part of the local electoral work is also carried out by union activists. The strong links between the LO and SAP are also demonstrated through the controversial system of collective membership. Many local branches of unions are collectively affiliated to the Social Democratic Party. The close relationship is also reflected in the Party's leadership and in the government. During the long period of Social Democratic government, approximately half the cabinet has been recruited from the LO and its affiliated unions.

In addition to the high degree of organization industrial relations in Sweden are highly centralized. Union decisions about strikes and the signing of collective agreements are normally made by central bodies. For example, the LO secretariat must approve any strike that involves more than 3 per cent of an affiliated union's members. As well, the LO constitution requires each affiliated union to provide in its constitution for its executive board to have the final word on

strikes and contract negotiations. Finally, since 1952 the LO has increasingly become the primary presence on the union side in collective bargaining. It negotiates framework contracts with SAF, oversees the allocation of the negotiated sums among the separate union affliate negotiations and plays a part in the supplementary separate branch and local or club negotiations. Not surprisingly, membership ratification of collective agreements has practically disappeared. Similarly, there is considerable centralization of industrial relations on the employer side. SAF has fined members who have granted workers larger increases (usually as a means to secure scarce skills) than stipulated in the national agreements.

There is some recent evidence that this highly centralized approach to industrial relations is breaking down. Since 1983 the three major white collar industrial unions have bargained seperately with the engineering industry association. PTK's role has been reduced to co-ordinating issues such as pensions and social security. Similarly, in 1983 the Engineering Employers' Federation convinced the Metalworkers Union to negotiate independently of central negotiations. Furthermore, individual company run profit-sharing schemes are becoming widespread and, in some cases, in combination with local negotiations, account for more than 50 per cent of a worker's yearly increase in take-home pay. Such schemes seriously threaten the trade union movement's policy of wage solidarity

(i.e., equal pay for equal work regardless of a company's capacity to pay). The wage solidarity policy has been the major factor in reducing the difference between the lowest and highest average industrial wage from 30 per cent in 1959 to 13 per cent in 1979. However, in order to function effectively, it requires a highly centralized system of collective bargaining.

Some observers of the Swedish scene argue that not only industrial relations but many of the centralized solutions of the past appear to be breaking down. Ranging from the apparent ineffectiveness of Keynesian economics to the ever rising costs of maintaining a full employment policy and the collapse of traditional productivity theories, yesterday's centralized solutions seem to be creating serious problems. Some of the most interesting and influential working life research in Sweden regards new forms of work organization as a key factor in re-establishing the basis for legitimizing political, social and economic policy and programs in Sweden. While the current "legitimacy crisis" is usually discussed in terms of the failure of centralized solutions, the challenge is more accurately described as how to reconstruct the links among the various levels in society -- from the individual to the nation state. Such a challenge also exists in Canada. However, in Canada some of the problems related to the development of new

forms of work organization have to do with too little rather than too much centralization.

Industrial relations in post-war Sweden have tended to be co-operative rather than adversarial, especially when contrasted to the experience in Canada. This was not always the case. Until the 1930s Sweden had one of the highest strike records in Western Europe. However, in 1938 the LO and SAF signed the famous Saltsjobaden Agreement in which, under the threat of government regulation, both parties agreed to lay down their adversarial arms. The Saltsjobaden Agreement signaled the birth of what has been called the "historical compromise" between capital and labour. Management was given free rein to rationalize production in order to generate economic growth. In return, the labour movement secured a far-reaching influence in the distribution of the resultant new wealth.

The collaborative nature of the Swedish industrial relations system also characterizes the relation between the labour market parties and the government. According to von Otter (1982)

> ... one major feature of the Swedish political system is the degree to which the industrial-relations organizations and business associations as well as other special-interest groups are drawn into the policy development and administrative activities of the government. Whereas the adjudication of the conflicts of interests in many other

countries is achieved through governmental decisions at the executive or legislative levels, or through outright economic or political battles, in Sweden it is attained through direct consultations with, and negotiations among, the parties of interest and their respective economic and political bargaining powers affect the results. One finds, therefore, that trade union and employer representatives and spokesmen for other organizations not only offer opinions to the government and parliamentary bodies, but also are members of government commissions of inquiry. They are also appointed to administrative boards and boards of civil service agencies at the national and county levels, playing an active role on them. The organizations themselves maintain relatively large and competent staffs in their national offices, for study and research and to fulfill their many representational functions. Many important policy and administration initiatives flow from this participation of non-governmental groups. The LO, for example, is actively involved in planning and offering proposals in such areas as manpower and social policy.

The 1986 round of collective bargaining in the public sector was accompanied by strikes and lockouts. These, along with the controversy concerning the LO's proposal for the creation of wage earner funds, have often been interpreted, especially outside Sweden, as an indication that the era of co-operative industrial relations is coming to an end. However, according to those interviewed for this paper, the spirit of Saltsjobaden is very much alive.

III TWENTY YEARS OF WORK REFORM

Since the late 1960s, three distinct but overlapping and related phases of national programs can be identified in the development of new forms of work organization in Sweden. The first, from 1968 to 1978, saw the emergence of new principles for organizing work. The second, from 1975 to 1982, saw the government, through an unprecedented wave of legislation, attempt to regulate work-place reform. The third phase began in 1982, and continues today. It is characterized by union and management working closely together to diffuse and institutionalize new forms of work organization. What follows is a description and assessment of these three phases. What were the starting conditions? What strategies were adopted? What were the results? And what lessons did management, union and the government learn from these experiences? For each phase the role played by the state, both as employer and as government, is clarified. This section includes a brief discussion of the relationship among the three phases and concludes with an assessment of future directions in Swedish worklife reform.

PHASE I: THE BREAK WITH TAYLORISM

The major national programs of work reform launched in Phase I were the URAF program, the Delegation program and the New Factories program. The URAF program derived its name from the Swedish abbreviation of a Joint Council for Development established in 1966 by SAF, LO and TCO. URAF launched a number of "experiments" in private sector enterprises, particularly in industry. The Delegation program consisted of committees established by the government to initiate workplace democratization within the public sector. The New Factories program was not, in fact, a program but rather a number of enterprise projects supported by the Technical Office (later the Management Group) of SAF. Before discussing these three programs in some detail, I will describe the background of this first phase of workplace reform.

Background

According to Tomas Sandberg (1982), a long-time observer of the Swedish scene, until the mid 1960s work organization in Sweden was characterized by two main features. First, jobs were increasingly fragmented and mechanized. Second, this Taylorist approach to designing work was carried out by management with the full support of the unions. The 1948 LO-SAF agreement, for example, stated:

> For the employees, rationalization is advantageous because it results in higher production. Time and motion studies are, if appropriately pursued, a rational instrument for accomplishing this goal.

The 1950s and '60s were decades of unprecedented economic growth in Sweden. The benefits of rapid rationalization were widely shared through the development of comprehensive social policies. The welfare state became firmly established. There were, it seemed, no limits to growth. And Taylorism, or scientific management, was viewed by both management and union as a critical strategy in ensuring that the "golden years" of the '50s and '60s continued. Indeed, the social partners believed that unless one were prepared to make major sacrifices in productivity and, in turn, the standard of living, the traditional way of organizing work was the only way. Accordingly, when problems with the organization of work began to appear in the mid '60s, unions and management not only lacked the capacity to deal with them, they also had considerable difficulty understanding the nature of the problems. It is in this light that the work reform efforts of Phase I, their approach, successes and failures, must be understood.

It is generally believed, especially by foreign observers, that personnel probems were the main driving force behind the launching of the national programs in Phase I. To a certain extent this was true. By the mid 1960s economic prosperity had

reached a point where some people were less willing to accept more and more fragmented and intensified jobs as the price of even further growth. This new reaction appeared up in increases in short-term absenteeism, high personnel turnover and recruiting difficulties. However, the decisive factor in the development of work reform in Phase I was (and still is today) production problems. This was certainly the case in both the private and public industrial sectors. Most significant was the metal manufacturing industry, which by 1965 accounted for nearly 50 per cent of total industry export. Work organization in the metal industry was characterized by extreme Taylorism -- far reaching fragmentation and predetermination of jobs. In fact, by the mid 1960s Sweden had the highest number of time and motion studies and piece rate systems in the world. The consequences of this extensive adoption of Taylorism were extreme production problems. According to Tomas Sandberg (1982):

> The extensive differentiation among jobs had to be balanced by costly integrating mechanisms such as large numbers of supervisors and production planning specialists. The difficulty in co-ordinating production could only be handled by long lead times resulting in higher capital investment in goods in process. Furthermore, over and under capacity situations developed simultaneously in different parts of the production system. In sum, production became more inflexible and vulnerable to upset conditions.

The URAF Program

The URAF program which ran from 1969 to approximately 1976, was modelled after the Norwegian Industrial Democracy Project (Emery and Thorsrud (1976). The other influence on its development was an earlier Swedish research project on work motivation. The Norwegian Project had been the first large scale "test" of the socio-technical systems (s.t.s.) perspective on work organization and industrial democracy. This perspective, which had been developed at the Tavistock Institute for Human Relations in England in the 1950s (primarily by Fred Emery and Eric Trist), is a multilevel strategy for restructuring not only the workplace but western society as a whole.[3] However, only one element of s.t.s. thinking -- autonomous work groups -- was incorporated into the URAF program. The Swedish research project on motivation was carried out by Reine Hansson under the auspices of the Personnel Administration Council (now the FA Council), a management research institute. As Sandberg (1982) points out, "Hansson's research at the large engineering firms Atlas Copco and Husgvanna had demonstrated the nature, causes and consequences of work organization problems as clearly as the

[3]For an overview of the s.t.s. approach see Trist, E. The Evolution of Socio-technical Systems: A Conceptual Framework and an Action Research Program, Occasional Paper #2, Toronto Ontario Quality of Working Life Centre, June, 1981 and Emery, Fred, The Emergence of a New Paradigm of work, Canberra, Centre for Continuing Education, ANU, 1978.

English and Norwegian studies." Moreover, the reference group linked to the work motivation research project consisted of people who would later play leading roles not only within URAF but also within the Delegation and New Factories programs.

URAF was centrally organized and jointly controlled by a small committee of management and union. According to Gustavsen (1985) the goal was to demonstrate the viability of new forms of work organization by means of enterprise experiments. The strategy was for the central committee to convince local union and management to initiate experiments. The central committee provided researchers to assist the local parties and to document the experience. The experiments were then to be used as models for other firms. Fifty per cent of the costs of the researchers was financed by the government via a grant from the Swedish National Bank. The remaining 50 per cent was split among the central labour market parties. All other costs (e.g., extra labour costs to cover workers attending meetings) were picked up by the local employer.

Altogether, the URAF program included about ten projects. All but one, Skandia Insurance Co., were located in industry. Probably the most successful project, at least in terms of demonstrating an alternative to Taylorism, was the experiment in the assembly department at Atlas Copco's rock drilling

equipment fabrication plant in Sickla. A description of the Atlas Copco project is contained in Section V, Notes.

Despite the success of the Sickla and other experiments, management and union support for URAF gradually faded away. With the exception of the writing and issuing of formal reports, URAF was actually finished in 1973. SAF was particularly critical of certain aspects of the program strategy and of the role played by the researchers. The employers felt that the ideas underpinning the URAF approach (e.g., group work) were too general to have any long-lasting impact and were not being sufficiently adapted to local circumstances. In addition, SAF felt that the ideal of group work was being pursued in a manner that was inevitably and perhaps deliberately alienating to first line supervisors. In SAF's view the support of this group (which is unionized) is crucial if new forms of work organization are to survive and flourish. Finally, the employers believed that the researchers had too big a say at the expense of the local parties in the design and implementation of the experiments. As a result, local management and unions were not as committed to the changes as they should have been nor were they able to learn from their experience. Finally, SAF objected to the "scientific" manner in which the experiments were carried out -- extensive data collection and diagnosis followed by carefully monitored changes and rigorous evaluation. In SAF's view this

natural science approach to research was inconsistent with the manner in which enterprises normally change and in fact slowed down the change process.

On the union side the objections, with one critical difference, were similar in nature. Labour, like management, was disappointed with the pace of change. In addition, a spokesperson for TCO publically attacked URAF on the grounds that "the pretext of scientific research was being used to delay necessary changes in work organization." However, labour also expressed strong concerns about the extent of the changes generated by the experiments. In particular the LO felt that the focus of the experiments was too limited to the shop floor and that management was blocking any efforts to expand their scope. Given this assessment, the unions turned their energies to advocating legislative changes in order to gain the necessary formal power to "force" management to acquiesce to their demands in the area of work organization.

The Delegation Program

As mentioned earlier, the Delegation program consisted of committees or delegations established by the government to initiate workplace democratization within government enterprises, departments and agencies. There were two such committees active in the period from 1968 to 1975: the

Industrial Democracy Delegation (FODD) in the state-owned industrial sector and the Delegation for Democracy in the Public Administration (DEFF). Both committees were made up of high level officials, mainly unionists and politicans though management was represented. Their approach relied less on using changes on the shop/office floor as the starting point in the democratization process and more on using representative systems, especially the union organization. The delegations generally did not follow any "blueprint" for action. Instead they encouraged the local parties to shape the change process to fit their own needs. However, the delegations were not above using their substantial political clout in securing the participation of those (usually managers) who were not inclined to co-operate.

FODD

Unlike the URAF and New Factories programs, the projects in the state owned companies were not launched primarily because of concerns about productivity and job satisfaction. Such concerns were expressed initially, at least by the public, but soon faded away. FODD and its subsequent projects were a result of political demands that were being put forward from various quarters for the democratization of work. According to Sandberg (1982), the groundwork for FODD was laid in 1966 when the Social Democratic Party suffered severe losses in the

municipal and county elections of that year. It was, in part, as a result of this outcome that the party stepped up its activities in the industrial area, in preparation for the parliamentary elections of 1968, and in co-ordination with the party congress held in June 1968. The party's industrial policy program contained a demand for the democratization of working life, one of the points to which concrete meaning would be given following the elections of 1968, when for the first time since 1944, the Social Democrats gained an absolute majority in the second house of parliament.

In November 1968, the Minister of Industry set up an official committee of inquiry, " -- a delegation for experimental activity in the area of industrial democracy in the state-owned companies". In the directive, it was stipulated that:

> The question of more democratic relations in production at present constitutes one of the most important objectives that must be realized as part of the further development of the democratization of society as a whole. That means that there must take place an expansion of the individual's opportunities to exercise influence in the areas of importance to him. (This goal) concerns questions of the organization and planning of work, the environment of work in its broadest meaning, and personnel questions. However, issues relating to overall company policies, such as marketing and orientation of production, should not be exempt from employee influence. (This study should) provide guidelines for intensified industrial democracy in all parts of Swedish society.

As mentioned above, a key feature of FODD was the great emphasis put on extending worker participation, especially through representatives. In fact, of the five FODD projects, it was only at the Arvika tobacco processing plant that changes in work organization were carried out. The Notes section contains a description of the Arvika project.

In the view of the labour market parties, with the exception of the Arvika project, little was accomplished in the FODD program. Management resented being forced to participate by their political masters in a program which management saw as biased toward the union. Relations between local management and the FODD committee in two of the experimental sites were characterized by outright hostility. Such an atmosphere was not conducive to furthering the aims of the program. Accordingly, union support soon withered away and in early 1975, six years after it started, the FODD delegation was formally dissolved.

DEFF

There is no documentation in English concerning DEFF, the public administration delegation. It is therefore, difficult, based on a limited number of interviews, to reconstruct an accurate description of its activities. However, it appears that some 1000 consultative and, in some cases, joint decision-

making committees were established in about 20 various government departments, boards and agencies (e.g., the Labour Market Board). These committees dealt primarily with issues of personnel policy, especially the appointment of supervisors and managers. There were few, if any, changes in work organization.

A formal evaluation of the DEFF program was carried out in 1975. It showed that at the local level both management and union were pleased with the results and wanted the program to continue. However, at the central level, both parties felt threatened by increase in local level activity. In particular, the union felt that worker participation in DEFF led to mixed loyalties among the membership. In light of general polarization between union and management in Sweden over the proposed legislation on Co-determination (discussed below), DEFF as a formal program was unable to survive. However, research has shown that its local activities continued in an informal manner and in at least one agency the DEFF committee system was incorporated into a Co-determination Agreement. It should be pointed out that several local unions vehemently but unsuccessfully objected to DEFF's demise.

THE NEW FACTORIES PROGRAM

It is important to appreciate the strategic significance of the New Factories program (NFP). When the program was conceived in 1973-4, SAF correctly foresaw that competence in a new form of production engineering was the key to enhancing Sweden's competitive position on the international market. It was the production of high quality, customized but "routine" products (e.g. cars), not the invention of new, technically sophisticated products that was Sweden's engineering industries comparative advantage. New forms of work organization, therefore, were of strategic importance to Sweden. SAF's experience with the NFP gave management the ideological and technical superiority (to complement its legal authority) over labour in the area of work organization.

As we will see the unions abandoned the Phase I approach to workplace reform in favour of a legislative approach. In retrospect this is considered by some unionists and most observers to have been a crucial mistake. Despite the enacting of numerous new laws in the '70s, in the 1980s, the development of new forms of work organization is dominated by management. This is in marked contrast to the period of the late '60s and early '70s and is directly related to the success of the New Factories program.

The New Factories program was, especially at the central level, a management initiated and steered program which ran between 1975 and 1978. It operated under the loose coordination of SAF's Technical Department and, according to Bjorn Gustavsen (1985): "centered on the use of workers' skills, knowledge and attitudes as key ingredients in the development of a new philosophy of production engineering." This is not surprising as when SAF established the Technical Department in 1966, all those hired were industrial engineers. Most came from the Swedish steel firm Fagersta where, significantly, they had conducted experiments with group organization and group wages in the early 1960s.

In sharp contrast to the URAF and Delegation programs, the New Factories program took a much different approach to its task. Instead of representatives from the Technical Department trying to stimulate local developments, the local management took sole responsibility for initiating local activity. Workers and their local unions were typically passive participants. The government was not involved in any way. The role of the Technical Department was to document the changes, act as a dialogue partner (and occasionally as a consultant) when asked and to foster the exchange of experiences between the various enterprises. An invitation had been extended to the LO to participate in the program. But the union, given

their assessment of the URAF program, declined, concentrating their efforts on questions of co-determination.

There is considerable disagreement as to how many experiments actually constitute the New Factories program. According to SAF the number is approximately 500 with the rationale being as follows. One hundred cases have been thoroughly documented by the staff of the Technical Department, another 200 have been documented by others (e.g., researchers, journalists) and the remaining 200 have had some form of contact with the Technical Department. These figures are challenged by the unions who argue that the absence of an independent evaluation by qualified researchers is necessary before any firm figure could be established. Regardless of one's view on this issue, however, there is no doubt that the number of experiments in the New Factories program far exceeds those in URAF and DEFF which together total but fifteen.

Given the decentralized change strategy in the New Factories program it is not surprising that the work organization innovations developed were varied considerably. However, two of the best known experiments, the Saab-Scania engine assembly plant in Sodertalje and Volvo's car assembly plant in Kalmar, are of particular interest. In both these cases changes in work organization were combined with changes in technology and foreshadowed one of the current joint phase

III programs. The new technological element at both sites was the replacement of a fixed-pace assembly line by a non-paced trolley for each engine or car. At Sodertalje, assembly was done in several parallel assembly loops placed alongside a materials handling area, which also contained a buffer of engines that were waiting to be assembled or that had been assembled. At Kalmar all the assembly trolleys bearing auto bodies followed the same path through the plant. The Notes section contains a description of the Saab-Scania and Volvo projects.

In the view of management the New Factories program has been a major success. There is no doubt that a substantial number of projects were launched and that the foundations of a new and economically viable philosophy of production engineering were firmly established. The only drawback for management has been the ineffectiveness of the program's diffusion strategy. The plan had been to spread the learnings of the program via seminars and home study kits aimed at industrial engineers. Roughly 800 of Sweden's 4500 industrial engineers have attended such seminars. However, in SAF's view their impact has been minimal. In fact, one SAF spokesperson believes that the hostile union reaction to the first major public presentation of the conclusions from the New Factories Program (discussed below) had a more positive impact on the diffusion of the program's key ideas than all the seminars

combined. Furthermore, the idea that "model" projects could be used as an example for others to follow did not prove fruitful. For SAF the main vehicle for diffusion has been the face-to-face exchange of ideas and experience among local managements directly engaged in work redesign activities. As we shall see, this and other ideas from the New Factories program have been incorporated into the design of the Phase III national programs.

On the union side, especially at the central level, the New Factories program created considerable difficulties. As Gustaven (1985) points out.

> They could not outrightly reject principles of organization based on worker competence. Partly, this would imply going against reason; more important it would mean going against parts of the membership (and local unions) which welcomed the break with Taylorism, high speed assembly lines, etc.

At the June, 1978 public meeting referred to above, the unions and labour researchers severely critized the program. The logic of many (but not all) of their arguments was questionable. In fact, the ideas contained in the New Factories program had caught the union off guard. They were unprepared for management taking the initiative in an area the unions consider "theirs". The meeting had been sponsored by a quasi-government agency, the Work Environment Fund. Part of its agenda was to re-establish positive contact between the two

parties in the field of work organization. Of course, given the union reaction, no such contact was made. In the words of Tomas Sandberg (1985): "My impression is that LO, because of its lack of competence, once again missed the boat with respect to developments in the area of work organization."

Today, more than a few union officals, at least in private, share this view.

PHASE II: THE LEGISLATIVE OFFENSIVE

The national programs in this phase of workplace reform are dramatically different from those in Phase I. In Phase II the programs are all industrial relations laws. Of these by far the most important is the 1977 Co-determination Act (MBL), which is the focus of the following discussion. I will however, also touch upon the 1978 Work Environment Act (WEA). In addition to these two laws several other important acts were passed during this phase. These include the Act on Employment Security, the Shop Stewards Act and the Act on Union Representation on Company Boards of Directors. These acts deal in indirect and usually minor ways with the issue of work organization. However, they are listed to illustrate that the MBL and WEA acts should be seen as part of an unprecedented legislative offensive on the part of the unions and the Social Democratic Party. Indeed, a major slogan in the unions' campaign to gain popular support for the passing of MBL was "Smash Clause 32." This refers to a clause in the SAF constitution which prohibits membership in SAF to any enterprise which in any way relinguishes management's right to unilaterally hire, fire and direct the organization of work.

As indicated earlier, this second set of national programs is certainly related to the work organization of experiments of Phase I. However, in several important respects the MBL and

WEA acts, while also growing out of the situation in the late '60s, must be viewed as quite independent of the Phase I programs. In the labour movement, for example, MBL was seen as the beginning of the final phase in democratizing Swedish society. Political democracy (at least for males) had been won early in the century; social democracy (the welfare state) had been achieved in the '50s and '60s. The challenge of the '70s was economic democracy. In addition, Sweden was also influenced by the wave of student protests and radical politics which swept through Europe following the 1968 Paris student-worker riots. Finally, despite the URAF program, the LO was heavily criticized for not doing more about some of the psycho-social problems of Tayloristic forms of work organization and the general lack of influence of workers and their unions in the highly centralized industrial relations system. This criticism became widespread in 1969, following a wildcat strike by well paid workers in a state owned iron mine. A central issue in the strike was poor working conditions, broadly defined. Accordingly, in its 1971 congress, the LO demanded power for workers at <u>all</u> levels of the company. Furthermore, it demanded that this be guaranteed not through cooperation or bargaining but through national legislation. The LO policy, endorsed also by the TCO, led to the passage of the Co-Determination Act. It is not surprising, therefore, that in contrast to Phase I the renewal of work organization is

only one of the many questions that the MBL and WEA Acts were designed to address.

The Co-Determination Law

The main points of this act are as follows:

- The employer is obliged to inform the union about the company's production, finances, investment plans and personnel policies. Furthermore, the employer is required to keep the union continually updated on these issues.
- Article 32 states that such issues as organization of work are subject to negotiation between the employer and unions and are hence no longer the exclusive domain of management.
- The employer has a broad duty to negotiate with the union before changes affecting employees are made.
- The union has the right to demand negotiations on a broad range of issues, such as the organization of work, the introduction of new technology, new investments, the appointment of chief executive officers, etc.
- If local negotiations fail to culminate in an agreement, the local union can forward the dispute for central negotiations between union and management. (A maximum time for negotiations is specified.) If both the local and central negotiations fail to produce an agreement the

employer is free to proceed with his/her decision. Only under very special circumstances can the employer implement decisions before negotiations are ended. The union, however, has no right to strike or to exercise other forms of direct action to force an agreement.

- The peace obligation, generally in force while agreements last, has been modified to allow some scope for the use of conflict measures in local negotiations. However, an agreement must be in place before this provison applies.
- In cases of disagreements between the employer and union over the interpretation of an agreement, the union has priority of interpretation. This means that in the period between the emergence of a conflict and its settlement in, for instance, the Labour Court, the view of the union prevails. The view must, even though it may in the end be proven wrong, have a reasonable foundation; otherwise the employees will in principle be liable to compensate the employer for damage.

In sum the act emphasizes negotiations as the main vehicle for furthering worker influence. It substantially expands the area of worker-management negotiations and implies a circumscribing of traditional managerial authority.

The act is largely about procedures. According to Gustavsen (1985), the idea was that the new areas for worker influence would successively be filled with content as co-determination agreements were entered upon on various levels, ranging from the central to the local. Here, however, problems emerged. The unions wanted the first step after the legislation to be a general agreement on co-determination, but during negotiations about this agreement the employers rejected the union's demands. For a time, especially in the private sector, negotiations got stuck at the central level, leading to a Catch 22 situation. For the unions to negotiate an agreement they had to present ideas about such things as work organization. For such ideas to emerge, there had to be some kind of experience. Such experience, however, could not be gained as long as the requisite agreements were not in existence. Of course, there was a lot of experience within the Phase I programs; however, at the time these experiences were in disrepute. As Gustavsen (1985) points out: "None were fully acceptable to all parties involved. The unions had objections to the New Factories program, the employers had objections to the Delegations and, to some extent, both had turned against their own joint program, URAF."

The Public Sector

Under pressure from the central government, MBL agreements were signed in the late '70s in the public administration sector and the state-owned industrial sector. These agreements tended merely to copy the wording of the legislation. Local level agreements were expected to fill in the content. However, while there are no precise figures, as of 1987, no more than 10 to 15 per cent of the potential number of local agreements have been signed. From the perspective of both management and union this low figure is due to the excessively legalistic and formalistic manner in which MBL was adopted in the public sector, especially in the state sector. According to a spokesperson for the State Employers Confederation, once the state agreement was signed the rules for negotiations became more important than the content. Parties were fined for not holding meetings within the specified time frame. Consequently, lawyers rather than line managers tended to dominate negotiations. Apparently some managers preferred this approach as it saved them the task of making decisions. In fact MBL has helped maintain a culture in which public sector managers administer rather than manage. In several cases management would fulfill its obligation to inform employees by depositing mountains of detailed, technical reports on the negotiating table and then leave the room. In a few cases it appears that negotiations were, in fact, carried

out by mail. The situation in the regional and municipal sectors was not as dramatic. A spokesperson for the TCO felt that MBL had definitely led to more formal and legalistic negotiations in these sectors as well. However, the existence of a generally more cooperative climate in these sectors prior to MBL somewhat limited this development. A 1981 research report found that municipal sector managers and union officials had a generally positive view of MBL, especially as regards improved inputs for decision making (the management view) and increased access to information (the union view). The study also found virtually no basis for the fear that union rights under MBL would supercede the public's right to determine policy through elected representatives.

There is little doubt that work redesign efforts suffered a major setback during this period of intensive legislative activity. Many of the informal spinoffs from DEFF and similar locally initiated activities ceased. The above mentioned study in the municipal sector, for example, found that the development toward direct participation in the organization of work was slowed down by MBL. In fact, the study concluded that MBL, with its rules governing contact between union and management, tended to strengthen rather than change the existing bureaucratic, administrative hierarchy.

In trying to understand the reasons for the above developments it is important to bear in mind the background to Phase II -- the final phase in democratizing Swedish society. There is a consensus that the central unions oversold MBL both before and after its enactment, through massive communication and education campaigns (this point applies to the private as well as the public sector). In many cases local unions were led to expect that MBL would provide them with a weapon they could wield unilaterally against management. When MBL did not live up to this expectation, the disappointment was deeply felt. In the public sector the situation was compounded by wage disputes, cuts in government funding and considerable uncertainty as to where to draw the line between the rights of employees and the rights of the general public as expressed through their elected officials.

Recently, and here I begin to move into Phase III, the parties in the public sector have signed an agreement to simplify MBL negotiations and to initiate a co-operative approach to improving service to the public and the job satisfaction of public sector employees.

The Private Sector

In the private sector no agreement was reached until 1982. By that time the situation had changed significantly and

the 1982 agreement marks the beginning of the third phase of workplace reform in Sweden. Accordingly, the following discussion of management and union views on the impact of MBL in the private sector pertains to the Act itself and not to the subsequent agreement.

When the legislation was passed, management predicted that the consequences would be increased red tape, excessive time spent in meetings of questionable value and reduced management effectiveness. In some cases, especially in the years immediately after 1976, when some unions pursued a traditional wage negotiations model to MBL negotiations, these predictions have proved to be correct. But in general, the view of management has been that the overall effect of MBL, at the level of the enterprise, has been positive. The requirement to inform and negotiate has forced management to be more precise in formulating change proposals. The local union has proved to be an effective dialogue partner often contributing valuable ideas in the consultation and negotiation process. In fact, according to one study, not one managing director of the large (over 2000 employees) enterprises surveyed felt that union influence via MBL had lead to inferior business decisions. Finally, union involvement in the decision making process, in the eyes of the membership, has helped to legitimize many management decisions.

In understanding management's reaction one must underline that the implementation of the MBL legislation corresponded with a severe downturn in the Swedish economy. In the private sector, especially in enterprises vulnerable to international competition, local unions and managements decided to cooperate in trying to make MBL work in both their interests. In contrast, in the public sector pressure for increased effectiveness was just beginning to be felt.

The unions initial reaction to MBL was one of bitter disappointment. The LO member unions had expected legislation which would give them the equivalent of veto rights over management decisions. When it became clear that this was not the case the law was derisively labelled the "beep beep" law - whereas before MBL the employer could "drive" over the union, now with the legislation he had to beep his horn first. This initial disappointment was intensified by the change in the economic climate. During development stage of the Act the economy had been booming and the union expected the legislation would give them the power to control issues such as plant expansion, recruitment, etc. Instead, by the time MBL was enacted, the unions found themselves using it to deal with plant closings as Swedish industry (in particular steel and ship building) was being significantly downsized.

By 1980 union attitudes toward MBL had become much more positive, primarily because of a lowering of expectations concerning the Act. It is generally agreed that MBL has significantly increased the unions' access to management information (which according to the law is virtually unrestricted). In addition, it is felt that local unions are learning how to use MBL effectively to influence management. However, according to a 1983-4 survey commissioned by the Work Environment Fund, the vast majority of union officials (and managers) felt that their influence via MBL was highly constrained. In addition, the union officials (but not managers) wanted a considerable upgrading of this influence at the expense of the power of management and owners.

Work redesign efforts suffered a setback in the private sector during the initial years of MBL. The unions saw the legislation as a collective bargaining model for controlling participatory activities via union officials rather than for facilitating the direct participation of workers. This vision, in this phase at least, contradicted the SAF vision as expressed in the New Factories program. Furthermore, the shift at the central level from cooperation to contention served to slow the process of diffusion of work redesign efforts. Inside SAF, for example, not only was the position of those managers favouring cooperation with the unions in the area of work design weakened, but the need for work design itself was

questioned. As indicated above, relationships at the local level were much more cooperative. However, work organization was not a central concern in local level MBL negotiations.

The Work Environment Act

The late 1960s witnessed the emergence of a public debate concerning work environment issues. At that time the Social Democratic government appointed an official commission to investigate these issues and to make proposals to the government regarding appropriate legislation. The commission, comprised of representatives from the central management and union organizations and the major political parties, worked without any major tensions and presented its unanimous proposals in 1976. In 1978 the Work Environment Act was approved by a large majority in parliament.

A discussion of the full content of the WEA is beyond the scope of this paper. What is of relevance here is what the Act had to say about the issue of work organization. First, the Act declares, on the level of general principles, that the organization of work is a legitimate issue in the context of health and safety. Second, the Act specifies a material rule aimed at the direct regulation of the organization of work.

> The working conditions shall be adjusted physically and psychologically to the employee. The organization of

work shall preferably give the employee opportunity to influence his working situation.

According to union and management, in practice WEA has had little, if any, concrete impact on the organization of work. Gustavsen (1985) suggests three reasons why this is so. First, in contrast to its Norwegian counterpart, the Act is vaguely worded and lacks specific guidelines. Second, there was little coordination between the design of the MBL and WEA Acts. In fact, the acts were developed quite independently of each other. Consequently, most people saw issues related to work organization as "belonging" to the Co-determination Act while the WEA was interpreted as mainly covering more traditional work environment concerns. Some observers have argued that the WEA was intended to give some idea about the content and direction of workplace development while the MBL was to provide the chief mechanism through which this development could be achieved. This connection, however, was never made by management or union. Finally, again in contrast to its Norwegian counterpart, the WEA was not supported by an implementation strategy consistent with the need to address the problems of work organization at the local level. This was a serious weakness, as in Scandinavia the work environment field is dominated by central level experts.

PHASE III: THE CHALLENGE OF DIFFUSION AND INSTITUTIONALIZATION

The signing of the 1982 Agreement on Participation and Efficiency (UVA) by the LO, PTK and SAF marks both the end of the second and the beginning of the third phase in the development of new forms of work organization in Sweden. Interestingly, the basis for this agreement was developed by union and management while attending the 1981 "QWL and the '80s" conference in Toronto. This new phase is characterized by: (1) renewed co-operation between the social partners; (2) new forms of work organization being assigned a central role in meeting the challenges of new technology, international competition and a growing and educated labour force; and (3) the government playing a crucial role in building the infrastructure necessary to facilitate the diffusion, development and institutionalization of these new work forms. It is too early to judge whether union, management and the government will meet the challenge of phase III. However, if resources are any indication, Phase III signals that new forms of work organization are no longer subjects of "experiments" or likely to be the casualties of the inevitable periods of conflict between labour and management.

The following discussion of Phase III programs and activities is organized into three parts. The first, which draws extensively on Bjorn Gustavsen's analysis, deals with the

national level UVA agreement, describing its contents and assessing their significance. The second highlights some of the local level work redesign efforts in both the private and public sectors. Finally, part three describes the nationwide infrastructure that is emerging in the field of work organization. Particular attention is paid to the role of the government in supporting this infrastructure.

The Agreement on Efficiency and Participation

The UVA agreement states that "developing and improving the efficiency of the firm, together with safeguarding the employment, are matters of common interest to the company and its employees." Three main areas of development are specified: work organization, technology and economic issues and resources.

As concerns work organization, the agreement emphasises the concept of continuous development and underlines the need to make better use of the expertise, skills and experiences of employees, while seeing to it that jobs, management practices and control systems which can stimulate and involve employees are aimed at. The principle of a reasonable degree of freedom and competence in work is explicitly sanctioned. The section dealing with technology states that:

> "in the event of technological change, a sound job content shall be the goal together with opportunities for the employees to increase their skills and accept responsibility for their work. The knowledge of the employees should be stimulated together with their colleagues".

The agreement contains little on how the various change processes should be generated, beyond clauses on negotiations and the need to adapt the processes to local circumstances. A number of the critical issues pertaining to implementation are dealt with by the emerging infrastructure discussed in the third part of this section.

In sum, the UVA agreement stresses:

- labour-management cooperation;
- development;
- worker competence; and
- integrated solutions to problems of productivity and participation.

At face value, terms such as these hardly seem to be much more than empty slogans. However, in light of the developments described in Phases I and II, the agreement takes on much more importance. As Gustavsen (1985) argues, it is in fact a significant statement on the behalf of management and union in that:

> First, it emphasizes collaboration rather than the "one party" efforts such as the New Factories program which had to some extent dominated the 1970s.

> Second, it emphasizes development rather than structure. By this is meant that the agreement is built on the recognition that a number of issues in working life can not be "solved" through rules and specifications which are "laid down" by some authority or other, but have to be made subject to step-wise learning and progress.
>
> Third, it emphasizes the need to solve problems emerging out of management interest and worker interest jointly. Productivity and participation are both legitimate demands. There has been a tendency to deal with them separately which, however, creates problems. Solutions must, instead, be found within the area where these considerations overlap. A core element here is patterns of work organization which give people the possibility of developing competence and contacts and of making decisions.

In addition, the UVA highlights in several areas the importance of direct contact between employees and employers. In contrast, the Co-Determination Act is based solely on the union as the employer's counterpart. The Agreement on Participation and Efficiency emphasizes that participation is achieved both through unions and through direct consultation between management and employees.

The new agreement thus represents a trade-off between the parties. In exchange for more worker influence over what has traditionally been considered management issues, employers enhance their capacity to develop an enterprise organization which can rapidly change and adjust to variable external conditions. As Gustavsen (1985) puts it:

> Rather than a management which guards its perogatives and in return confronts a hostile union movement with demands for fixed rules and procedures to protect their members,

> the idea is to support the development of innovative and change-oriented enterprise where the unions take care of the interests of their members through influence over complex processes rather than through fixed procedures.

Developments at the Local Level

The Private Sector

Although the number of local level UVA agreements in the private sector is unknown, both union and management believe the figure is somewhere between 10 per cent and 15 per cent of the potential number of agreements. While it is perhaps too early to expect a higher percentage, it is also probable that managers are reluctant to sign agreements that commit them to fixed positions in times of rapid change. Similarly, a union official commented that the UVA agreement hints at, but does not deal directly with, the key challenge facing management and union: how to organize the change process as opposed to how to organize work. Furthermore, there are no "hard" numbers as to the number of local work redesign efforts that have started up since 1982 more or less independent of the national level UVA agreement. However, in the view of the labour market parties, there has been a significant increase in activities (due primarily to economic and technological pressures) since the lull in the late '70s. It is quite possible that the representatives from SAF and the central union organizations underestimate the local activity level. The polarization

between labour and management, which developed during and immediately following the passage of MBL more accurately describes the situation at the central than the local level. It is quite probable, for example, that spin offs from the New Factories program continued during the late '70s albeit at a somewhat reduced rate.

As an indication of the nature of local level developments I have chosen the case of Volvo -- a world leader in the field of new forms of work organization. One should not interpret the scope and depth of Volvo activities as being indicative of the general state of work redesign in Swedish industry. However, Volvo is by all intents the leading enterprise in Sweden. It has consistently pioneered innovations in management, industrial relations and corporate policy which have been followed by many others.

Following the signing of the 1982 UVA national agreement Volvo and the Metalworkers Union were one of the first to negotiate a local level agreement. While patterned after the national agreement, this local document gives even more weight to the importance of work organization. The following quotes are taken directly from a recently translated version of the agreement.

> Work organization must be constantly developed at all levels in order to increase the company's strength and competence and thereby contribute to security and employment. Development of work organization also

creates opportunities for making better use of the employees' experience and knowledge. Jobs, management practices and control systems which stimulate and involve the employees shall be the goal in this respect.

Varied and developing working practices shall be aimed for, so that individual employees can increase their knowledge and experience in the work and thereby become capable of accepting more demanding and responsible jobs.

It is essential that jobs and work organization are designed on the basis of the needs and requirements of the employees for a sound working environment.

The employer and the trade union organizations shall cooperate to develop work organization. In doing so, their aim shall be for joint regulation to be designed so that it provides increased influence and responsiblity for the employees in their work.

In designing work organization, active efforts shall be made to provide varied and meaningful jobs. Monotonous and stressful work should be avoided. The development of work organization will be best achieved by allowing people to develop at a rate corresponding to their own personal capacities and interests.

In the event of technical change, a sound job content shall be the goal, together with opportunities for the employees to increase their skills and accept responsibility for their work. The knowledge of the employees should be stimulated together with their ability to cooperate with, and have contact with, their colleagues. Jobs in which technical assistance forms an essential part (such as work at terminals) should be designed so that they provide a meaningful and richly varied job content and offer opportunities for alternative tasks. Close attention shall be given to the design at workplaces and the choice of equipment.

The Volvo agreement provides the framework for the design of a new car assembly plant in Uddevalla on the western coast of Sweden. This plant represents the beginning of a new phase in the development of new forms of work organization in Volvo. (The famous Kalmar assembly plant was the culmination of the

preceeding phase.) The Uddevalla plant is being built on the grounds of a former shipyard and has been heavily subsidized by the government. In exchange for these subsidies Volvo is expected to hire an unspecified number of shipyard workers who lost their jobs following severe cutbacks in the Swedish shipbuilding industry. A brief discussion of the organization design of the Uddevalla plant is contained in the Notes section.

It is worth pointing out that the scope and depth of the Uddevalla project (and the wording of both the Volvo and national UVA agreements) are considerably more advanced than their predecessors in Phase I, such as URAF. Unlike Phase I programs, current private sector efforts are not isolated experiments being carried out in one, or a part of one, department of an enterprise. Instead, they tend to be enterprise-wide and directly related to the enterprise's objectives and strategies. In addition, unlike URAF, the point of departure for today's projects is not the limitations of Taylorism but how to meet the unfolding demands of new technology and customers.

The Public Sector

The number of local MBL agreements in the public sector amount to no more than 15 per cent of the total number of

potential agreements despite the fact that, in contrast to the private age sector, these agreements were signed soon after the passage of MBL in 1976. The reasons for this low number, especially the excessive legalism that characterized their implementation, were discussed under Phase II. However, the reasons for this low figure persisting through the '80s are somewhat different.

According to both union and management the public sector labour market parties, for the most part, have put down their adversial arms and are now working closely together to enhance service to the public and job satisfaction. The most public sign of this new accord is the recent agreement in the state sector referred to in the discussions of the Phase II programs. The cause of this change in orientation, if not in practice, was the sharp and extensive criticism of the size and quality of the public sector which emanated from SAF and other groups in Sweden. This criticism led to some cutbacks in public services. Consequently, in order to retain their jobs and budgets, public sector management and unions are determined to prove that they are just as efficient as the private sector.

Translating the new agreement into practice has not been easy. According to a recent study local public sector MBL negotiations concerning both the act, and agreements (where they exist) are relatively formal in nature. In contrast to

developments in the private sector they strongly resemble traditional wage negotiations. Furthermore, according to a union spokesperson, there is relatively little interest locally in signing agreements. In part this is due to the rather limited scope for modification and adaptation to local circumstances permitted in the national agreements. However, perhaps a more important reason is that both union and management are finding more informal approaches better suited to their needs. There are numerous local initiatives - not directly linked to the new agreement - going on in the area of work organization.

The Swedish Authority responsible for providing financial assistance to students, CSN, is one example. At CSN, a major reorganization has led to the formation of work teams of 5 to 12 people, a reduction of two levels in the management hierarchy and the inclusion of union and student representatives on CSN's board of directors. For each major change the union was extensively involved. Results of these changes include a reduction in the time required to grant loans from 8 to 14 weeks in 1980 to 10 days in 1985 and a 27 per cent reduction in administrative costs over the same five year period (Cameron, 1985).

A second example is the current experiment with autonomous work groups in the delivery of home care for the aged in the municipality of Orebro. The experiment is part of a larger project to decentralize political and administrative control and to reduce bureaucracy in the use of government funds. Since the nurses have organized themselves into autonomous groups, productivity and quality have improved significantly.

At the national level there are some signs that a more co-ordinated approach is emerging. SAV, the state employers confederation, in collaboration with the unions, is about to launch a program to stimulate local developments. A key aspect of the program is the stated willingness of the government to consider bending certain rules and regulations to accommodate local initiatives. However, in sum, both national and local efforts directed at developing new forms of work organization appear to lack the sense of urgency and depth of those in the private sector.

Building the Infrastructure

Perhaps the most significant aspect of the development of new forms of work organization in Phase III is the decision by management, union and government to construct a national infrastructure to facilitate the development, diffusion and institutionalization of these new forms. Cole (1985) in a comparative study of the diffusion of new of forms of work organization in the United States, Sweden and Japan argues that the development of a national infrastructure is crucial if these new forms are to become a way of life. According to Gustavsen (1986) the functions of the emerging Swedish infrastructure are to:

- develop and sustain a set of ground rules for change -certain values and procedures that everybody has to accept;

- monitor development in working life to know what goes on, to find good examples to promote;

- organize a number of search conferences and other activities to bring people together and to form networks;

- initiate and support change in a number of enterprise clusters;

- establish and maintain a system of open communication and democratic dialogue around developments in working life (Experience has demonstrated that changes in working life often fall victim to a process of rumors, underhand evaluations and the like. It is necessary to force the debates onto a public scene and in such a way that what is not argued publicly does not count.);

- offer a certain number of educational possibilities and support these through written material, videos, etc. However, conventional training is not a key element;

- perform some policy functions, as not even the most horizontal of networks can do without some decisions concerning priorities, selection of key areas for development, etc.

The emerging infrastructure is far from mature and may or may not survive. However, it marks a major step forward in Swedish worklife reform. The government established Work Environment Fund (AMF) in combination with a network of formal

and informal bodies of a bi- or tripartite nature make up the core elements of the emerging infrastructure. The discussion that follows deals primarily with AMF and two of its core programs. In addition, I will briefly describe the mandate and program of the Swedish Center for Working Life (ALC), one of the institutions in the above mentioned network.

The Work Environment Fund

The Work Environment Fund was established by the government in 1972 to finance research and development and provide training and information with regard to both the physical/chemical and psychosocial work environment. The Fund is overseen, as is normal practice in Sweden, by a tripartite committee and is responsible to the Minister of Labour through the Division for Employment Conditions. The 1986/87 budget was approximately 110 million dollars Canadian. The AMF is financed through a tax (.155 per cent) on employer payrolls.

Until about 1981, with the exception of its funding of the Working Life Center, the AMF devoted practically all its resources to more traditional work environment issues (e.g., chemicals, ergonomics). However, in concert with the signing of the Development Agreement on Participation and Efficiency, the Fund has allocated a significant and steadily increasing proportion of its budget toward programs and activities dealing

with new forms of work organization. Two major programs are the Development Program on Technology, Working Life and Management (UTAA), and the Leadership, Organization and Participation Program (LOM).

Development Program on Technology, Working Life and Management (UTAA)

The UTAA program was launched in 1982 in order to provide management and union with a forum for putting into practice (and learning from this experience) the ideas expressed in the UVA agreement. It was steered by a tripartite committee with the day to day work carried out by a small secretariat consisting of representatives from management and the unions and a full time secretary. The program officially ended in August, 1987. Over the entire life of the program total expenditures were about 14 million dollars Canadian. Roughly two-thirds of this has gone directly to projects, the rest for diffusion activities. Grants to projects have mainly been for financing consulting assistance, training and study visits to other enterprises and documentation (e.g., videos).

Forty companies and public agencies participated in the program. The projects supported covered a wide range of technical applications, for example, CAD, expert systems, FMS

and process control. In each case the project had strategic significance for the enterprise concerned and involved the introduction of a new generation of technology. To qualify for the program a project had to involve the application of a computer-based technology in a manner that supported both the organizational and human values expressed in the UVA. The project also had to be defined within the organization itself, "owned" by line (versus staff) management, actively involve the local unions and have had sufficient scope within it for real experimentation with work organization. In addition, the project had to be important enough to the organization that it provided most of the funding. The UTAA Program provided only the additional resources needed to enable a project to realize the high ambitions of the program.

The projects in the Development Program cover almost the entire gamut of worklife in Sweden, in terms of sector, industry, region and size. Within the guidelines, a project could be anything -- from the application in Saab-Scania of an advanced robotized assembly line and information technology that was used to support the creation, in the assembly process, of self-regulating work groups with considerable autonomy for local administration and planning; to the original design of a mobile, portable on-line terminal system (to be used by rural postal delivery people.) There were also projects involving networks of small companies, within either one region

(Ostergotland) or one industry (wood products). (Mansell, 1988)

According to management and union representatives diretly involved in UTAA some of the key lessons have been:

- The adaption of established attitudes, practices and organizations in order to realize a more holistic and participative development process is a long and demanding process.
- The similarities between different sectors, (e.g. public and private,) appear to be more striking than their differences regarding their prerequisities for realizing such adaptations.
- Among the critical prerequisites in such processes are management's vision and business ideas, their values regarding their employees, their previous investments in creating new organizations and skills, and their assumptions regarding the development of technology.
- Development is characterized by an integration of change processes, necessitating incremental steps. Attempts at the great leap forward are prone to failure.
- The fusion of technologies and organizational changes will require a re-evalutation of traditional boundaries between professional and trade groups.
- Face-to-face networks are critical for the dissemination and extension of experience. The Program supported two

networks -- one focussing on CAD/CAM technology and one focussing on office information systems. Although the organizations in the network had little more in common than the specific technology, the network idea proved to be a very useful way for different enterprises to learn from and with one another. In addition, the program helped create a network of competent resources (e.g. in universities, research centres, labour and management organizations) in this field.

There is nothing particularly new or earth shattering about these lessons. In fact, they are standard fare in most current texts on work organization and technology. What is critical to understand is that they represent the shared learning of a diverse group of individuals, groups and enterprises. Furthermore, the lessons are based on direct experience and not on reading reports or attending training courses. And it is just this type of learning which is necessary if new forms of work organization are to become a way of life in Sweden or any other country.

Leadership, Organization and Participation Program (LOM)

The LOM program was officially launched in early 1985 under the auspices of the Work Environment Fund and is steered by a committee representing the main labour market parties in

both the private and public sectors. The program is scheduled to run for five years with a total budget of approximately 14 million dollars Canadian. LOM has two main aims:

- to support practical improvements in working life through the use of research; and
- to enhance the long term development of knowledge about conditions in working life and about how to change such conditions.

The LOM program attempts to build on what has been learned from more than two decades of Scandinavian experience with worklife change. Some of the key features of the approach underlying LOM are (Gustavsen, 1986):

- an understanding of the work redesign process as the local generation or construction and continuous reconstruction of different patterns of work organization. The notion that general principles can be developed from 'model' cases and then be widely applied is rejected;
- a recognition that the local redesign process cannot be superficial but must involve a large network of people within the enterprise in the ongoing communication, discussion and evaluation of many views, experience and elements of theory. This process is guided by

principles. Hence, redesign should be continuous communication and democratic dialogue;

- the development of a cluster of enterprises, in complementary collaboration, as the central unit of change;

- the use of multi-level strategies which link local developments with the broader social and political supra-structure including legislation, collective agreements, research institutions, other clusters of enterprises, etc.; and

- an emphasis, in both theory and practise, on the distinction between concrete organization and the way in which concrete organization is created, i.e., generative organization.

To date some 70 enterprises are participating in the LOM program with the support of about eight universities, community colleges and research institutions. In addition a new PhD program in work organization has been developed. In the view of labour and management it is too early to assess the impact of LOM.

The Swedish Center for Working Life (ALC)

The ALC was established by the government in 1976 in conjunction with the passage of the Co-determination Act. Overseen by a tripartite committee, the ALC reports to the Minister of Labour and is funded (approximately 11 million dollars Canadian in 1986) by the AMF. The main rationale behind the ALC was to build up the unions' knowledge and competence in handling working life issues. Initially, the ALC focused its activities on the implementation of MBL. However, today it conducts research in areas such as women in working life, labour law, the relation between work and daily life, and work organization. One of its most significant and influential research projects has been the Utopia project.

UTOPIA is the Swedish acronym for Training, Technology and Products from a Skilled Worker's Perspective. The three year project was a collaborative effort on the part of officials and members of the Graphic Workers' Union, social scientists and computer scientists. In the first phase of the project, through the use of plywood mockups and slide projectors, a team of scientists and graphic workers developed a set of ideas for the hardware, software and work organization aspects of page makeup -- a major job function of graphic

workers.[4] As a set these ideas reversed the de-skilling trend that was becoming widespread as page makeup was increasingly automated.

UTOPIA attracted so much attention that its ideas were incorporated into a 13 million dollar Canadian Nordic project to develop a fully integrated text and image processing known as TIPS. TIPS promises to be one of the most sophisticated computer systems available in the printing and publishing industry combining text entry, image enhancement, pagination and layout in a single work station. As a result of its involvement with TIPS, the UTOPIA team was able to substanially influence the design of a new technology which is currently being tested in two major newspapers in Sweden and Finland.

[4]An interesting feature of UTOPIA was the use of physical media to tap workers' tacit or personal knowledge (Polanyi, 1973) of the labour process.

Reflection on the Three Phases

Each of the three Phases has made distinctive and crucial contributions to the development of new forms of work organization in Sweden. In Phase I, for example, the URAF, FODD and New Factories programs all demonstrated the possibility of organization choice. Furthermore, the New Factories program also showed that technical choice was possible. The phase II MBL legislation ensured that changes in work organization would not be limited to the shop or office floor. And Phase III makes the connection between work organization and economic and technical progress explicit, public and legitimate.

The three Phases can also be viewed as components in a continuous and unfolding process, where the limitations of one Phase give rise to the next and where the elements in one Phase are made more dominant or recombined in some manner in a latter phase. Phase III, for example, is in part an attempt to synthesize two of the main elements of Phases I and II -- direct and indirect representation. The MBL approach to work redesign is foreshadowed in the DEFF program. The lessons SAF drew from the New Factories program about the limitations of using highly visible "model" projects for diffusing new forms of work organization clearly influenced the network strategy

underlying the UTAA program. And most elements in the Phase III infrastructure were present in Phases I and II.

In part this process has "naturally" happened. However, it has also been shaped, to a degree, by the conscious efforts of management, union and the government. As an outsider I was struck by the capacity of these groups to learn from their collective experience and exercise choice within the limits of historically given conditions. Without this learning the three phases would be quite different in nature and more closely resemble discrete layers in an archeological dig than a social process.

Prospects for the Future

Neither the government, unions nor management expect there will be any major changes in the current approach to developing new forms of work organization in the next few years. If anything, existing programs will be strengthened and complemented by similar efforts. A government-appointed tripartite commission, established to monitor the implementation of MBL, recently released its unanimous final report after six years of investigation. The commission found that although the Act has proved to have several weaknesses from an employee point of view, amendments should be deferred until it has been seen what the social partners themselves can

achieve through collective agreements and other autonomous measures. The unions are, for the moment, not asking for continued legislative reforms. While they do not regard the current situation as ideal, they do see it as offering considerable potential for further development. Finally, as might be expected management is confident that deepening and extending the Phase III approach offers the best chance of meeting the challenge of international competition, new technology and a growing labour force.

The success or failure of the Phase III approach will depend, in large part, on its capacity to stimulate local level activity. However, in a country whose industrial relations system (and whose whole society) is highly centralized, this is no small task.

IV Some Lessons for Canada

Sweden and Canada are, of course, different in several fundamental ways. While Sweden has a relatively homogeneous population, Canada with a greater diversity of language and ethnic groups is a far more heterogeneous society. Futhermore, Sweden is a unitary state and consequently has none of the jurisdictional conflicts over issues such as training and other labour market programs which characterize Canada's federal system of government. In addition, the degree of foreign ownership in Sweden is much lower than in Canada. And most important, the influence of the labour movement in Sweden is much greater than in Canada.

The above would suggest that Canada has little to learn from Sweden in terms of work organization or most other issues, the differences are simply too great. However, in other ways -- I suggest more important ways -- Sweden and Canada are very similar. These similarities do not imply that Canada can fruitfully copy Swedish strategies and programs. However, some ideas may be helpful as inputs or building blocks to the design of a Canadian approach to the issue of organization renewal.

As pointed out earlier, the economies of both Sweden and Canada are highly dependent on the world market. Both export raw materials as well as manufactured goods, although Sweden

exports more finished goods. Both economies are characterized by a relatively high degree of economic concentration. Finally, some of the major industries compete in the same world markets: steel, pulp and paper, and telecommunications. Thus, in many respects, Sweden and Canada are faced with similar economic realities to which they must adapt. It is on the basis of this common ground that the author believes that the Swedish experience with new forms of work organization is relevant for Canada.

Perhaps the primary lesson to be learned from Sweden is that economic and technical progress are directly dependent upon the development of new forms of work organization.[5] Without innovations in organization design the competitive position of many enterprises will deteriorate and the positive potential of new technology will not be realized. Of course, many Canadian managers and more than a few trade unionists would not disagree with this statement. However, if this lesson is to become widespread and translated into action in Canada, more extensive and complementary efforts are required on the part of management, unions and the government.

[5]Not discussed in this paper is the Swedish evidence concerning the positive effect of new forms of work organization on general social and physical well being on and off the job. See for example Gardell (1987).

The current situation in Canada resembles, in part, the situation in Sweden in the mid 1970s. As with URAF and FODD, the initial phase of high profile, joint union management, centrally stimulated quality of working life projects has slowly dissolved. And, like their Swedish counterparts, some managers in Canada in corporations such as Northern Telecom, General Motors, and Westinghouse are pursuing plant level initiatives often with the active involement (or at least the passive support) of their local unions. However, local union participation in such activities runs counter to the official policy of several central labour organizations (e.g., the Ontario Federation of Labour) and many union national offices (eg., CUPE, IAM). Even where national union policy is supportive (eg., USWA) the lack of resources available to assist local unions means that management tends to dominate local activities. Consequently, as the inevitable introduction of new technology is increasingly coupled with changes in work organization, more conflict between union and management and between different levels of the union can be expected.

There is no question, given the strength of Canadian labour, that the introduction of new technology will be delayed. However, the lack of labour support for technical and organizational innovation could well put Canadian enterprises at a disadvantage relative to their foreign competition.

Swedish labour support for such innovation, for example, is viewed by Swedish management, government and unions as a strategic advantage in the international market-place.

One does not have to look to Sweden in order to identify what could be done to secure the active support of Canadian labour for the development of new forms of work organization. As the Ontario Federation of Labour has stated on countless occasions, changes in labour legislation to facilitate union organizing drives and to ensure employment security in the light of technological change would go a long way to improving relations among government, the unions and management. And the Economic Council of Canada in their recent report Making Technology Work recommended changes in collective bargaining legislation in order to encourage "genuine" negotiations over the introduction of new technology. Finally, the recent CAW study (Robertson and Wareham, 1987) found that there is an urgent need for a comprehensive technological change strategy in Canada's auto industry.[6] The proposed framework for such a strategy includes legislative reform.

If Sweden is any indication, such legislative changes are not only desirable but also necessary if the full benefits of

[6]It is interesting to note that a significant part of the CAW study deals with the work organization and labour relations implications of new technology.

new technology and work organization are to be realized. Behind the current collaborative programs in Sweden is the MBL legislation and the information and negotiation rights it confers upon unions. However, legislative reform would not seem to be on the political agenda in Canada now or in the foreseeable future.[7]

On a more positive note recent joint union management initiatives in the steel and electrical and electronics sectors may foreshadow the emergence of infrastructures (excluding legislation) that can support the development of new forms of work organization. As described in Section III, an infrastructure must articulate an ideology that justifies changes in work organization and be capable of organizing the interests and resources of the actors involved so that changes can be introduced and institutionalized. Without such an infrastructure, new forms of work organization will never move beyond "stand alone" intiatives in isolated enterprizes to being integrated into societies values, norms and practices concerning work.[8] Several developments in selected enterprizes

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[7]It is possible that particularly strong unions such as the CAW may negotiate through collective bargaining a form of "co-determination". This appears to be the case in the United States with the General Motors/UAW Saturn project.

[8]Significantly, the two countries that have made the most progress in this area are Sweden and Japan. There are enormous differences in their respective approaches to the development of new forms of work organization; however, the one factor common to both approaches is the conscious design of robust national infrastructures. In Japan the key actors in the

in Canada are more advanced than their counterparts in Sweden. However, the Canadian cases stand out as exceptions while in Sweden new forms of work organization are much more widespread - a consequence due in part to the design of a robust infrastructure.

A sector based approach may prove to be effective in overcoming the limitations of relying exclusively on activities at either the enterprize or societal levels or both. On the one hand the development of new forms of work organization raises issues which cannot be dealt with only at the level of the enterprize (e.g. training and education). On the other hand the societal level is too distant to engage key stakeholders or to make effective decisions about program design and delivery.[9] Witness the demise of the Ontario Quality of Working Life Centre and the ongoing difficulties of the Canadian Labor Market and Productivity Centre.

In a decentralized country such as Canada one important function of an infrastructure would be to relate enterprise-level changes in work organization with broader societal

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national infrastructure are the Japan Federation of Employers Confederations and the Japan Union of Scientists and Engineers.

9 As Trist (1976) puts it ".... Western industrial societies are weak in the middle. Too little effective social structuring is available between institutions concerned with the management of the overall social aggregate and the single organization".

change. Jacquie Mansell (1987), in her review of workplace innovation in Canada, argues that what is needed are not just macro level changes that are consistent with micro-level changes but developments which directly link workplace innovation and societal change. The Steel Trades Congress and Employment Congress is one example of union and management making consistent changes - collaboration in the design and delivery of labour adjustment programs.[10] The emerging initiative in the electrical and electronics sector, which deals with a much wider range of issues, (e.g. training, education, communications, introduction of technology), may provide the opportunity to make the direct links advocated by Mansell. Business strategies in much of the Electrical and Electronic sector place a strong emphasis on product and/or service quality, flexibility and innovation rather than on minimizing labour costs.[11] These strategies contain the realistic possibility of a desirable future for the Canadian economy. And to be fully successful, such strategies will require flexible, democratic and participative forms of work organization.

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[10]A development which, in terms of the active involvement of labour and management, appears to follow closely the Swedish approach to the design and delivery of labour market programs.

[11]As a general point Canada needs to integrate more closely policies and programs designed to develop new forms of work organization with other science, technology, employment and economic policies aimed at improving the performance of the economy.

Notes[12]

Atlas Copco

In the Sickla experiment the most important changes were, first, elimination of the machine-pacing of assembly, and second, the switch from an organization based on individual jobs to one based on groups. Instead of assigning each worker to a fixed job, the department was divided into a number of teams, each of which was given the responsibility of handling the assembly of entire batches of machines. All the necessary work on each batch was done within a team, which followed the batch from the time materials and parts arrived at the department to the time finished machines were delivered.

Worker autonomy was increased not only through the introduction of teams but also through the possibility for the workers to switch from one team to another. Skill levels gradually increased as the workers learned more and more jobs, and eventually all the workers could do all the jobs, except for the honing work. Another step in enhancing workers' skills was the integration of one of the two indirect positions in the main group.

The more flexible organization of work meant that the department's capacity was used more efficiently, since the balancing losses that arose previously were eliminated. Because several batches of machines could now be assembled simultaneously, shortages of components ceased to be such a severe problem, and it became easier to insert rush orders into the flow of production. The multi skilling of the workers meant that absenteeism was less damaging.

Participation was affected in several ways. The role of the supervisor changed partly because of a drastic simplification of the job card routine and partly because it became customary for decisions (on beginning of assembly, overtime, etc.) to be made in consultation with the workers. At the suggestion of management, a position of team leader was introduced, but was eliminated following some resistance from the workers to a group representative. Two consultation groups were formed, supervisor and staff specialists -- one for production planning and one for industrial engineering, consisting of workers. Moreover, from time to time, there were department meetings of all employees.

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[12]The Atlas Copco, Arvilia, Saab-Scania and Volvo case descriptions are drawn heavily from Sandberg (1985).

Arvika

In the materials preparation department of the Arvika plant, workers were granted the opportunity to decide on job design and job distribution, but took advantage of this opportunity only to a limited exent. This change did not go further, partly because the jobs already called for a moderately high level of skills and were relatively independent, and partly because a sharp increase in production tended to hold workers to the types of work they knew best. In the other three departments at Arvika, horizontal division of labour was diminished considerably more through job rotation than in the materials preparation department, primarily because workers felt more need to shift between jobs in those parts of the factory.

Participation was increased not only through the right to decide on job design and distribution but also through the establishment of a position of group representation. This position took over a large part of the foreman's supervisory duties (except, however, in the chewing-tobacco and manual packing departments). Workers alternated in the position of group representative -- in the preparation department this was done by turns of six weeks. Moreover, department committees were established consisting of three workers and the supervisor. The committees were responsible for production planning, personnel matters, maintenance, etc. All employees in the same department were brought together for a department meeting once a month.

The effects of these changes on productivity were difficult to judge precisely but seem to have been moderately positive.

Saab-Scania and Volvo

In the Saab-Scania engine plant, work was organized with three people at each of the parallel assembly loops. They were given responsibility for the assembly of a whole engine, with a time allotment of 30 minutes per engine. They were given the right to divide the work among themselves as they wished. Instead of a time cycle of 1.8 minutes, which would have been normal in a conventional arrangement, they could assemble the whole engine over a period of 30 minutes.

The productivity effects of the new technical and organizational design in the Saab-Scania plant are several. The system of parallel assembly loops has meant an increased flexibility and a reduction in the sensitivity to disturbances. Production volume may be increased by placing more loops into operation. Different loops can handle different variants. On a conventional line, both these types of changes would require that the line be re-balanced. The sensitivity to disturbances was reduced in that it became possible to operate as many loops as can be supplied with components, tools and manpower.

The new design implied jobs that conferred more autonomy, required higher skill levels and offered greater variety. But the group-working created a situation of competition where the workers voluntarily increased the working pace considerably. As both production and payment per day were fixed, the increased working pace did not result in higher production or payment; rather work was finished one and a half hours in advance. The workers spent this time chatting and drinking coffee.

The intensified working pace during the shortened working day meant a physical effort which in the long run the body could not stand. Despite considerable ergonomic improvements, several workers have had to quit their jobs at Saab-Scania or find new jobs in another part of the plant.

By 1983 an industrial robot had taken over the heaviest parts of the assembly operations. Also, each worker now assembles a whole engine, but in order to keep working pace down to the planned level, the organization of work has been switched back from a group to an individual basis.

At the Volvo Kalmar plant assembly is divided into sections in of discrete operations (e.g. the electrical system or the interior trim). The work cycle varies between 16 and 40 minutes, depending on the number of stations and the way in which jobs are changed. Worker participation is increased mainly at the individual level through the introduction of a new job design. Thus operators could influence working methods and the division of the work, but very little else.

At Saab-Scania's development groups were launched on a large scale. In these groups the supervisor, the industrial engineer and some operators from a section participated. The emphasis in their discussions was on the work environment and production questions. At Kalmar only one of the work teams within a section established a consultation group with a similar makeup.

Volvo Uddevalla[13]

The organization design of the Uddevalla plant began with several joint union-management groups from various Volvo plants sharing their experience in developing new forms of work organization. A permanent design group was then formed under the leadership of the plant manager; it includes the president of the local Metalworkers Union and rank and file workers. The group is responsible, within key economic parameters laid down by senior management, for developing the organization design of the new plant. The union was able to negotiate the right to hire their own outside experts to assist them in the design process.

From a management perspective the aims of the organization are to increase production, to improve quality, to reduce absenteeism and turnover, and to facilitate recruiting. From the union perspective the goals are to increase work cycles and to enhance worker responsibility and self management.

The design process has not been without friction. It has even been argued that the plant should revert to using the traditional assembly line (which has been abandoned in all of Volvo's Swedish plants). Indeed, the design as it now stands is such that it can be more or less easily converted to a traditional line. This may or may not represent some doubt about the viability of the proposed design. According to Gustavsen (1985) continual organization design, even at times in the direction of Taylorism, is a key characteristic of the current phase of work reorganization. The organizational principles for the new plant are as follows:

- small production units,--six mini-plants with about 100 workers in each
- fixed object assembly, which means six workers assembling cars on carriers. There are 16 docks in every mini-plant, which means 96 cars will be assembled at the same time.
- longer work cycles--one hour compared to the eight minute at a traditional assembly line and the 24 minute cycle at Kalmar.

[13]The description of the Volvo Uddevalla project is based on Hoffmaier (1986).

- assembly of whole functions, which means that a worker is assemblying the whole steering system or power system.

- The "total car concept", which means that 20 people are responsible for the whole car. The group is responsible as a group for quality, quantity, absences, discipline, etc.

- extensive and ongoing training with the workers themselves acting as instructors.

APPENDIX A

LABOUR MARKET POLICY

The government's labour market policy has played a critical role in the development of new forms of work organization in Sweden over the last 20 years. According to the labour market parties, strategic, long-term joint programs of work reform are not possible without the guarantee of employment security provided by this policy. In particular the labour market policy makes union participation in such programs politically feasible. However, as the policy has been more or less constant over the last 20 years, it is evident from the discussion in the body of this paper that the policy should be seen as a necessary but by no means sufficient, condition for union management collaboration.

For the most part, the interaction between labour market policy and work organization has been as described above, from the former to the latter. However,as the significance of new forms of work organization becomes more widely appreciated in Sweden, there are signs that the government's labour market policy is being adjusted accordingly.

According to official government documents, "The central goal of Swedish economic policy is full employment." In fact in 1986, at a time when unemployment stood at a low, by Canadian standards, 3 per cent, the Minister of Labour noted that " unemployment certainly is the most important political issue today." Monetary, wage, and fiscal and credit policy are all crucial elements of an economic policy for full employment. However, Sweden's success in maintaining consistently low levels of unemployment is also attributed to the government's so-called active labour market policy.

Swedish labour market policy is put in operation via four program areas:

- Employment and counseling services, aimed primarily at streamlining the job seeking process by shortening vacancy and application periods.
- Programs to influence labour supply, aimed at matching up the labour supply more closely to the demand for labour. They consist mainly of labour market training and relocation incentives.
- Programs to influence demand for labour, aimed at increasing the demand for labour by means of temporary employment, hiring new employees earlier than planned or providing incentives for the recruitment of hard-to-place

labour. These programs consist primarily of relief work, measures to create jobs for the disabled, wage subsidies for employing the disabled, recruitment incentives and other programs aimed at companies.

- Cash benefits to the unemployed, a social insurance system designed to compensate for loss of income during unemployment.

The 1985/86 the expenditures on the various programs and associated activities are broken down as follows:

Employment Service (counselling, placement, and relocation assistance)	07.1%
Employment Training (grants and costs)	20.7%
Special Programs for Occupationally Handicapped (wage subsides, employment institutes, public sheltered employment, etc.)	16.8%
Job Creation Programs (youth teams, temporary public work, etc.)	24.2%
Unemployment Benefits	28.7%
Program Administration	02.5%

Note that 70 per cent of the budget is spent on "active" programs (e.g. training) while less than 30 per cent is spent on cash payments to the unemployed. In Canada the figures are more or less reversed.

The Labour Market Board (AMS) and the recently formed Employment Training Board (AMU) are responsible for developing and delivering labour market programs. Both boards, which report to the government through the Ministry of Labour, are overseen by a national committee made up of representatives from labour, management and the government. The structure of AMS includes 24 regional employment boards, 300 employment offices and 90 employability assessment centres. AMU is made up of 24 regional boards and 100 skill centres. All boards, offices and centres involve labour and management in the design and delivery of their programs and most are overseen by tripartite committees.

There is no doubt about to the extent of the support of both labour and management for the government's labour market policy. Indeed, one employer representative commented that an

alternative policy was "unthinkable". The rationale for this support is not just humanitarian, it is also economic. Simply put, it is the view of the parties, based on extensive research, that the benefits of the active labour market policy outweigh the costs. And the costs are substantial - almost 2.75% of GDP. However, on the plus side of the ledger, the policy has done much more than make Sweden's unemployment level the envy of the industrialized world. In conjunction with the unions' policy of wage solidarity, the government's active labour market policy has directly contributed to the development of a highly competitive and technologically advanced economy. The origins of the two policies can be traced to the 1951 LO congress whose final report played a big part in shaping the Swedish Model. The following discussion of the 1951 Congress and its subsequent impact is taken from Meidner (1983), co-author of the active labour market policy.

At this congress the union took the position that the rationalization of industry was in the interest of labour. However, as a condition for their support of rationalization, the LO demanded that the government, through a labour market policy, take responsibility for the maintenance of full employment without inflation. In addition, the congress adopted the policy of wage solidarity -- that is equal pay for equal work -- without regard for enterprise or industry profitability. Two results of such a policy could be foreseen even in 1951. First, firms with profits below the average would be under pressure to increase their efficiency by means of rationalization. Second, firms which had exhausted their rationalization capacity could be squeezed out from the market by more competitive firms. In both cases jobs were threatened. It was obvious that the unions could carry out their policy of wage solidarity only if the government accepted the responsibility for full employment through a strong manpower policy, which alleviated the adjustment of the labour force to constantly changing conditions.

Meidner (1983) sums up the philosophy of the fundamental LO report of 1951 this way:

> Swedish unions not only tolerated new technologies, rationalization and structural change as means to promote economic progress and higher standards of living; they were also committed to a wage policy which in itself was a very strong vehicle for rationalization, both in single firms and in industries where an aggressive wage policy was unfavourable to firms unable to meet wage claims. But there was a price for the unions' willingness to act that way: the government's resolute and successful policy for full employment.

Following the SAP's adoption of an active labour market policy (and the LO's success in pursuing its policy of wage solidarity) came three decades of economic growth, social reforms and increasing real wages -- the "golden years" of the Swedish model. In the 1950s and '60s, a period of extremely rapid economic growth, labour market programs focused on overcoming obstacles that impeded the movement of labour between different occupations and geographic regions. In fact the Swedish labour market policy of the 1960s has often been described as a "moving van policy." In the 1970s, in the wake of the first oil crisis, Sweden's growth rate dropped and the focus of labour market programs shifted, especially to employment generation and training. In the 1980s, despite an understanding of the limits of labour market policy in maintaining full employment (discussed below), labour market programs are as important and as heavily financed as ever. In the view of both labour and management the government's labour market policy has played a critical role in this decade in facilitating the adoption of new technology. The success of this policy cannot be denied. Sweden, with a population of just over eight million people, leads the world in per capita use of robots. As of 1984 there were 20.2 robots per 10,000 people employed in Swedish manufacturing compared to only 3.7 in Canada. Nearly a quarter of Sweden's working population uses some kind of computer or computer-based equipment at work. As well, the Swedish engineering industry is an international leader in computerized manufacturing systems. It is a Swedish company, for example, that designed and is installing the automated vehicle guidance system at GM's car and truck complex in Oshawa, a key component in that organization's massive retooling program. It also appears that G.M., like Volvo, is taking advantage of the flexibility inherent in this guidance system to promote the use of self-regulating work teams.

The government's labour market policy was mentioned by several of those interviewed as a major factor in enabling union and management to undertake the current phase of work reform programs described in Section III. For one, Sweden's low level of unemployment makes collaboration with management politically defensible in the inevitable debates about such matters inside the union movement. Furthermore, the efficiency of the labour market policy along with the legislation on employment security and the narrow spread of Sweden's after-tax wages create a system "guaranteeing" life time employment. The active labour market policy facilitates the matching of the demand for and supply of labour. The legislation restricts management's rights to lay off workers and the minimal wage spread ensures that workers who are forced to take other jobs do not face significant cuts in real income as do their counterparts in many Canadian industries. The Swedish system differs from the Japanese system which applies mostly to male workers in large enterprises in limited sectors of the economy.

However, in terms of development of new forms of work organization, the consequences of lifetime employment are similar in both countries. In both Sweden and Japan, unlike Canada and the United States, there is little evidence of workers and their unions refusing to participate actively in the development of new forms of work organization because they fear the typical increases in productivity will lead to layoffs. It is interesting to note that the central issue in the recent round of negotiations at G.M. and Ford is management's interest in spreading the "team" based approach to work organization. The UAW has refused to go along with the proposal without some guarantee of employment security.

The Swedish form of lifelong employment security has also meant that Swedish unions, unlike North American unions counterparts, have not advocated an elaborate system of job control for pursuing job and income security. The essence of job control is to specify rules within the collective agreement to regulate every possible aspect of the job -- from the content of the job and access to it through to its evaluation and compensation, to the conditions under which it is performed. This system has been a major obstacle in the development of new forms of work organization in North America.

The system of job control in Canada and the United States developed in the context of scientific management, which had flourished in the period between the decline of craft unions at the turn of the century and the emergence of industrial unionism in the 1930s and '40s. Industrial unionism and its strategy of job control is best understood as the only realistic union response to the technology and managerial practices that American industry had developed for the mass production of standardized goods. Work that was previously "whole" had been broken down into a discrete set of clearly defined jobs by industrial engineers following scientific management practices. When industrial unions finally succeeded in their organizing efforts they found these practices well entrenched. Lacking the strength to challenge scientific management they instead sought to ensure conformity with established principles in order to curtail favouritism and capriciousness in management. If one accepts or is forced to accept the logic of scientific management, than this strategy makes sense. It provides workers security in a system where they are valued only for what they do, not for what they have done in the past or might do in the future. Tight classifications offer workers some hope of vested rights, some respite from being treated as interchangeable parts. Strict job hierarchies allow unions to insist on equal pay for equal work and promotion on the basis of seniority. If seniority provisions can be extended across departments, plants and companies, they can offer some "return on investment" for the years a worker spends with a company. Furthermore, if job

descriptions are kept tight, workers cannot be forced to double up and do another worker out of his/her job.

A consequence of this strategy at the plant level was that the number of separate job classifications grew enormously. In some of the large auto plants the number reached 500. Swedish industry was probably even more "Taylorized" than North American industry. However, as unions had no need to pursue a job control strategy in order to achieve job and income security, there are, at most, three separate blue collar job classes in a typical Swedish industrial enterprise. Needless to say, there is a world of difference between trying to change a traditional work organization with three job classes and one with several hundred.

Limits of Labour Market Policy

As the international economic crisis deepened in the late 1970s and early 1980s it became more and more obvious in Sweden that the active labour market policy was an insufficient instrument for solving the country's growing unemployment problems. In times of great economic difficulty, labour market programs could not fill the gap between supply and demand. They could only facilitate the matching process on a fairly balanced labour market. Accordingly, new ideas for economic renewal began to emerge. These ranged from an active policy for industrial development to the privatization of many public sector activities. Common to many proposals was the notion of redesigning work organization to enhance worker participation and enterprise flexibility. As these ideas and practices have spread there are currently some indications that the government's labour market policy is being adjusted to promote such a development.

To begin to understand the limits of labour market policy it is first necessary to understand how unemployment rates are calculated. In 1982 unemployment in Sweden stood at an abnormally high rate of 3.5 per cent. However, if one adds to this figure those involved in publicly financed relief work, job retraining and other sheltered activities and potential job seekers, the figure of "outsiders" amounts to about 10 per cent, not far off the average Western European unemployment level at the time.

According to Meidner (1983), the problem has been that matching functions and supply oriented measures of the active labour market policy have found their limits in the lack of total demand in the economy. Recent research has shown that lack of demand has been a far more important factor behind the rigidity of the labour market than people's unwillingness to move or the scarcity of skilled labour. It is not surprising,

therefore, that recent labour market programs have put more emphasis on demand-oriented measures such as temporary relief work and sheltered work, which has doubled since the middle of the '60s and now comprises almost one per cent of the total Swedish labour force.

However, Meidner also points out that research has shown that such measures also have their limits. Relief work projects, if they last too long, tend to be used as alternatives to regular projects, which means that they give diminishing net results. Sheltered work implies the risk of segregation for people who stay too long in these workshops. Sheltered work in Sweden is efficiently managed but has a poor rehabilitation record. Another risk stems from the fact that efficiently run workshops can become competitors to private small businesses and result in job losses in the private sector. The labour market authorities have had to be careful to avoid adverse effects of this kind.

These findings, plus the consensus in Sweden that labour market policy in recent years have been heavily overburdened has led Meidner, to conclude that " we have exhausted, at least intellectually, the arsenal of conceivable methods of an active labour market policy." In addition, it is generally agreed in Sweden that traditional Keynesian wisdom is not applicable since increasing general demand promptly results in inflation, deteriorated competitiveness and currency trouble.

In Sweden, as in most industrialized countries in the West, maintaining a full employment policy means coming to grips with the realities of today's world economy, in particular, the transition from industrial to service economies and the increased competition from labour intensive industries in the Third World, particularly Southeast Asia and Latin America. And there is no doubt that new forms of work organization are playing, and will continue to play, a central role in Sweden's response to the new world economic order.

In Sweden as in Canada there is a consensus that most new jobs will be created in the service sector. The sources of job growth in this sector mirror the technical and social forces that have transformed modern life in general. While automation reduces the number of semi-skilled workers in manufacturing, the growing complexity of marketing, planning, training and designing in a multinational world increases the demand for producer services, rising income increases the demand for leisure-related services, a changing population profile increases the demand for medical services, and the transformation of the family -- as more women work -- increases the demand for childcare and restaurant services.

Furthermore, at least in Sweden, few would disagree with the proposition that a healthy service sector is dependent upon a healthy industrial sector. Or to be more accurate, the two sectors mutually reinforce each other. The rationale for this statement is complex and beyond the scope of this report. (For an American perspective on this issue the interested reader is referred to the recent book by S. Cohen and J. Zysman, Manufacturing Matters: The Myth of the Post-Industrial Economy.) Moreover, it is also widely understood in Sweden that enhancing growth in the service sector is inextricably bound up with developing new forms of work organization. This is because the social and psychological aspects of service work are directly related to any effort to raise its quality and to increase the productivity of service workers.

The best known and most successful example of the development of new forms of work organization in the service sector in Sweden is the Scandinavian Airlines Systems (SAS) (Lindhom, 1987). Beginning in 1981 SAS targeted its market as the business man and woman. It then set out to capture this market by offering a higher quality and more efficient service than all its competitors. SAS's internal organization was rearranged to fit this strategy. In effect, the traditional hierarchy was turned upside down. The "front line" of employees now consists of those people who have direct contact with the passengers in their day-to-day jobs. These are the key employees. All the administrative personnel at all levels of the hierarchy are known as the "support troops" -- the middle managers, the bureaucrats, and so on. They are no longer thought of as managing, directing, or controlling, but as supporting the employees who work directly with the customers.

One result of all this is shown in profits. In 1982 the airline went from a loss to record profits, and in 1983 profits rose by more than a third. This was during a period in which many of the world's airlines had been suffering heavy losses.

With regard to increased industrial competition from the Third World, Swedish industry is clearly following a value added strategy. It competes not on the basis of low labour costs but on the basis of high quality and customized products, whose production (and to a lesser extent content) requires sophisticated technology and a skilled, committed workforce. In turn, management, union and government representatives active in labour market policy agree on the work organization implications of such a strategy. According to the director of the Swedish Labour Market Board:

> For Swedish companies it is the combination man/machine which is the real competitive weapon. A high degree of

competence in the form of knowledge, attitudes and experience is critical. But we must also have a flexible work organization geared to development. And management and trade unions who look to opportunities more than to obstacles.

In turn, new forms of work organization are beginning to shape Swedish labour market policy. Again according to the director of the Labour Market Board:

> Studies show that demands on occupational knowledge are continuing to increase for different occupational categories. These increased demands are associated with changes in work organization. The number of specialists is being reduced whilst the employees are to be able to perform a wider range of tasks. This is a shift of emphasis to wider occupational knowledge.

This tendency has been confirmed, for example, in Volvo's new factory in Uddevalla, in Saab's Trollhatten program to encourage the entry of women without technical backgrounds into today's technically-oriented and male-dominated car industry and in Saab's efforts in Malmo to interest redundant shipbuilders from the nearby shipyard in jobs at the Saab factory. In all three of these cases the AMU has worked with management and union to design and deliver the appropriate training programs. The rationale underlying the AMU's approach to the training is expressed in the following excerpt taken from an internal AMU document:

> During the latter part of the 1970s and throughout the 1980s, the Swedish car industry has devoted considerable efforts to the creation of small working groups or teams, each with its own responsibility for production within a defined production area, and with operating and maintenance responsibility for the production equipment used by the group. The highly positive results of this transition are clearly evident from the lower personnel turnover rate, the decrease in absenteeism and the lower costs for post-adjustment, as well as in improved production quality. In the assembly shops, the fundamental philosophy has been for the operatives to assemble as much as possible of the parts into complete units, known as "sub-assembly units", before these are finally assembled to make a complete car. Consequently, the duties of the individual employees have been expanded to include inspection and adjustment of assembled components as further ingredients. In light of these developments, the car industry has a very great need to provide its personnel with further training based on the competence requirements called for in the production workshops of today. Moreover, the even keener demand for

cars has led to a very great need of new recruits to the industry.

Looking to the future the AMU Director sees new forms of work organization placing more and different demands on labour market policy and programs.

> In the 1960s the saying went that everybody must be prepared to retrain and change jobs once or twice in a lifetime. For the 1990s we need something else: a merger between production and education -- a working life which not only absorbs new knowledge but generates new knowledge as well. An ongoing development both of the individual employee and of the work organization as a whole.

An illustration of a "merger" between production and education can be found in Sweden's vocational education system. The occupational training of adults is one of the main responsibilities of Sweden's labour market programs. There are indications that the nature of this training is being significantly altered by developments in work organization; moreover, there are also signs that the government's "regular" school system, in particular vocational education for young people, is being similarly affected.

In 1984 the Ministry of Education and Cultural Affairs established the tripartite Vocational Upper Secondary Education Reviewing Panel (OGY). Among its unanimous recommendations in its 1986 final report was that the organization of training between schools and workplace be more effectively integrated. This recommendation is based, in part, on a recognition that the current system is not able to transfer knowledge effectively. Underlying this judgement is an acknowledgement of the existence of knowledge that cannot be coded, stored and taught in schools. This knowledge is typically referred to as tacit knowledge. This form of knowledge has long been the basis of craft skills in industry. However, with the explosion of science and new technology more and more people have come to believe that propositional or theoretical knowledge (e.g., concepts and models etc. that one learns from books) are all that is required to meet the demands of new technology. However, Swedish experiences with the introduction of new technology (e.g., the Development Program described in Section III) have demonstrated that a work organization that legitimizes and capitalizes on workers tacit knowledge, and integrates it with propositional knowledge, is far superior in reaping the benefits of new technology than a work organization that does not. This form of work organization is characterized by multiskilled workers, group work and

considerable delegation of responsibility and authority to the shop-floor operator.

One aim of the OGY recommendation is to develop a system of vocational education that integrates propositional and tacit knowledge. Based on pilot projects in Volvo and SKF, the committee has proposed that students spend one year of their three year program working in an enterprise. Both the Volvo and SKF cases involved forms of work organization as described above. And its clear that these new forms of work organization have had an impact on the panel's recommendation.

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